Patent claims

1. An air-conditioning system, in particular a motor vehicle air-conditioning system, which can be operated as a heat pump, with a compressor (2), with a heater (3), with a throttle member (4) and with an evaporator (6), **characterized** in that the compressor (2) has a variable stroke and the throttle member (4) is designed as a controllable expansion valve (5) which contributes to regulating the heating capacity in heat-pump operation.

2. The air-conditioning system as claimed in claim 1, characterized in that the expansion valve (5) follows the heater (3) and precedes the evaporator (2).

3. The air-conditioning system as claimed in one of the preceding claims, characterized in that a high-pressure regulator, in conjunction with a compressor valve, is provided for regulating the compressor (2).

4. The air-conditioning system as claimed in one of the preceding claims, characterized in that a high-pressure regulator is provided for regulating the expansion valve (5).

5. The air-conditioning system as claimed in one of the preceding claims, characterized in that the expansion valve (5) is a pulse-width modulated expansion valve.

6. A method for regulating an air-conditioning system, in particular a motor vehicle air-conditioning system, which can be operated as a heat pump, with a compressor (2), with a heater (3), with a throttle member (4) and with an evaporator (6), characterized in that regulation is carried out with the aid of a regulator for the stroke of the compressor (2), and the stroke of the compressor (2) is carried out by means of

a high-pressure regulator, in conjunction with the regulation of a compressor valve (5) forming the throttle member (4).

7. The method as claimed in claim 6, characterized in that regulation is carried out as a function of a regulation of a pulse-width modulated expansion valve (5) forming the throttle member (4), a high-pressure regulator being provided for this purpose.

8. The method as claimed in either one of claims 6 and 7, characterized in that the regulation of the air-conditioning system in heat-pump operation takes place as a function of the desired temperature of the air downstream of the heater, taking into account a pilot control characteristic curve of a desired high-pressure value.

9. The method as claimed in one of claims 6 to 8, characterized in that the regulation of the heater temperature of the air-conditioning system in heat-pump operation takes place as a function of the desired temperature of the air downstream of the heater (3), taking into account the determined temperature of the air downstream of the heater (3), a correcting characteristic curve being taken into account.

10. The method as claimed in one of claims 6 to 9, characterized in that the regulation of the air-conditioning system in heat-pump operation takes place, taking into account the pressure of the refrigerant present in the heat-pump circuit, downstream of the compressor (2).